

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Patent application of William R. Shaffer :Atty. Docket: 35867-150907  
: Group Art Unit:  
: Not yet assigned  
Serial No.: Not yet assigned :  
: Examiner:  
Filed: Herewith : Not yet assigned  
: Related Appl.: Divisional of 09/428,726, filed 10/28/99, :  
METHOD OF AND APPRATUS FOR :  
HIGH TOLERANCE BRUSH HONING :

**PRELIMINARY AMENDMENT**

Commissioner for Patents  
Washington, D.C. 20231

Sir:

Prior to examination of this application and before calculation of the filing fee, please amend the application, without prejudice, in accordance with the following.

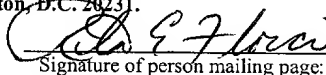
Charge any fee or credit any overage associated with this preliminary amendment or the application filing to Deposit Account No. 50-0573.

CERTIFICATE OF MAILING  
UNDER 37 C.F.R. 1.10

EXPRESS MAIL Mailing Label Number: EL 740190307 US

Date of Deposit: April 6, 2001

I hereby certify that this correspondence, along with any paper referred to as being attached or enclosed, and/or fee, is being deposited with the United States Postal Service, "EXPRESS MAIL-POST OFFICE TO ADDRESSEE" service under 37 C.F.R. 1.10, on the date indicated above, and addressed to: Commissioner for Patents, Washington, D.C. 20231.

  
Signature of person mailing page:

Rita E. Flocco  
Type or print name of person

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

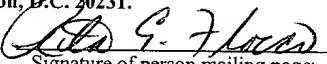
In re: Patent application of William R. Shaffer : Atty. Docket No.: 35867-150907  
: Group Art Unit:  
Serial No.: Not yet assigned : Not yet assigned  
: Examiner:  
Filed: Herewith : Not yet assigned  
: Related Appl.: Divisional of 09/428,726, filed 10/28/99, :  
METHOD OF AND APPRATUS FOR :  
HIGH TOLERANCE BRUSH HONING :

**SUBMISSION OF FORMAL DRAWINGS**

Commissioner for Patents  
Washington, D.C. 20231

Sir:

Applicant hereby submits (12) twelve sheets of formal drawings for the above-identified patent application. The drawings are being submitted concurrently with the Continuing Application Transmittal Under 37 CFR 1.53(b).

<p align="center"><b>CERTIFICATE OF MAILING</b> <b>UNDER 37 C.F.R. 1.10</b></p> <p>EXPRESS MAIL Mailing Label Number: <u>EL 740190307 US</u> Date of Deposit: <u>April 6, 2001</u></p> <p>I hereby certify that this correspondence, along with any paper referred to as being attached or enclosed, and/or fee, is being deposited with the United States Postal Service, "EXPRESS MAIL-POST OFFICE TO ADDRESSEE" service under 37 C.F.R. 1.10, on the date indicated above, and addressed to: Commissioner for Patents, Washington, D.C. 20231.</p> <p align="right"> Signature of person mailing page:</p> <p align="right"><u>Rita E. Flocco</u> Type or print name of person</p>
---

Respectfully submitted,

William R. Shaffer

BY: 

GREGORY J. LAVORGNA

Registration No. 30,469

Drinker Biddle & Reath, LLP

One Logan Square

18<sup>th</sup> and Cherry Streets

Philadelphia, PA 19103-6996

Tel: 215-988-3309

Fax: 215-988-2757

Attorney for Applicant

Amend the title of the application to read: "TOOL HAVING HONED CUTTING EDGE"

***In the specification:***

Replace the third paragraph of page 5 with the following:

--FIGS. 2a-2c are illustrations of generic cutting tools showing a representative cutting edge.

Replace the paragraph spanning pages 6-7 with the following:

--Referring to FIGS. 2a-3c, the workpiece 22 is shown with its edge 50 in an un-honed condition (FIG. 3a), with a radius hone 52 (FIG 3b) and a tapered hone, such as the waterfall hone 54 (FIG. 3c). In order to form the various hones, the apparatus 10 is configured to control the position of the workpiece edge relative to the abrasive brush. In the embodiment of the invention shown in FIG. 1, the relative location of the workpiece edge from the abrasive brush is achieved by changing the position of the motor 24 through the use of a horizontal movement mechanism 26 and a vertical movement mechanism 28 as will be discussed in more detail below.

***In the claims:***

Cancel claims 1-37.

Add the following new claims.

43. A tool comprising a cutting edge that extends from a first end to a second end and has an intermediate portion between the first and second ends, the cutting edge having a controlled hone formed on it that has a shape and dimensions variable along the intermediate portion of the cutting edge from the first end to the second end.

44. A tool as in claim 43, wherein the shape varies continuously from the first end to the second end.

45. A tool as in claim 43, wherein the dimensions vary continuously from the first end to the second end.

46. A tool as in claim 43, wherein both the shape and dimensions vary from the first end to the second end.

47. A tool as in claim 46, wherein both the shape and dimensions vary continuously from the first end to the second end.

48. A tool as in claim 43, wherein the shape at the first end is different from the shape at the second end.

49. A tool as in claim 43, wherein the shape at the first end is the same as the shape at the second end, and the shape along the intermediate portion is different from the shape at the first and second ends.

50. A tool comprising a cutting edge that extends from a first end to a second end and has an intermediate portion between the first end and the second end, the cutting edge having a controlled hone formed on it, the hone having a first shape and first dimensions at the first end, a second shape and second dimensions at the second end, and an intermediate shape and intermediate dimensions along the intermediate portion.

51. A tool as in claim 50, wherein the first shape and the second shape are substantially the same.

52. A tool as in claim 50, wherein the first shape and the second shape are substantially the same and the intermediate shape is variable between the first end and the second end.

53. A tool as in claim 52, wherein the intermediate shape varies continuously from the first end to the second end.

54. A tool as in claim 50, wherein the first shape, the second shape, and the intermediate shape are all substantially the same.

55. A tool comprising a cutting edge that extends from a first end to a second end and has an intermediate portion between the first end and the second end, the cutting edge having a controlled hone formed on it, the hone having a first shape and first dimensions at the first end, a second shape and second dimensions at the second end, and an intermediate shape and intermediate dimensions along the intermediate portion, at least one of the intermediate shape and intermediate dimensions varying continuously between the first end and the second end.

56. A tool as in claim 55, wherein the first shape and second shape are substantially the same.

57. A tool as in claim 55, wherein the first shape is different from the second shape.

58. A tool comprising a cutting edge that extends from a first end to a second end and has an intermediate portion between the first end and the second end, the cutting edge having a controlled hone formed on it, the hone having a shape and dimensions which vary continuously along the intermediate portion from the first end to the second end.

#### REMARKS

The above identified application is a divisional of Application Serial No. 09/428,726. Claims 38-42 of the originally filed parent application were directed to a tool having a honed cutting edge. Included in these claims were independent claims 38, 41 and 42. Additional claims 43-58 also directed to a tool having a honed cutting edge were added to the parent application by amendment. In a restriction of the parent application, claims 43-58 were collectively identified as Group III. The claims of the originally filed parent application have been amended herein to present the Group III claims.

New formal drawings have been submitted concurrently with the transmittal of the divisional application. Figures which were collectively identified as Figure 2 in the

originally filed drawings have been identified in the formal drawings as Figures 2A-C. The specification has amended accordingly.

No new matter is added by this amendment. Support for the added claims may be found at pages 11-14 and in Figures 11-13 and 15a and 15b of the specification. Entry of the foregoing amendment and an early action on the merits is solicited.

Respectfully submitted,

William R. Shaffer

BY: 

GREGORY J. LAYORRNA

Registration No. 30,469

Drinker Biddle & Reath, LLP

18<sup>th</sup> and Cherry Streets

Philadelphia, PA 19103-6996

Tel: 215-988-3309

Fax: 215-988-2757

Attorney for Applicant

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

***In the Specification:***

The third paragraph of page 5 has been amended as follows:

[FIG. 2 is an illustration] FIGS. 2A-C are illustrations of [several] generic cutting tools showing a representative tool edge.

The paragraph spanning pages 6-7 has been amended as follows:

Referring to [FIGS. 2, and 3a-3c] FIGS. 2a-3c, the workpiece 22 is shown with its edge 50 in an un-honed condition (FIG. 3a), with a radius hone 52 (FIG 3b) and a tapered hone, such as the waterfall hone 54 (FIG. 3c). In order to form the various hones, the apparatus 10 is configured to control the position of the workpiece edge relative to the abrasive brush. In the embodiment of the invention shown in FIG. 1, the relative location of the workpiece edge from the abrasive brush is achieved by changing the position of the motor 24 through the use of a horizontal movement mechanism 26 and a vertical movement mechanism 28 as will be discussed in more detail below.